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is difficult to see how this conception can be applied to individual mycelia or to spores, or even to the process of germination, as is done repeatedly by the author. Perhaps the introduction of new terms is superfluous in this case, for the idea is well expressed by the older terms dioecious and monoecious. These are used in reference to algae, where the condition thus designated exists.—H. HASSELBRING.

Fixation of nitrogen.—The Agricultural Research Association, a Scottish society which has its station at Glasterberry near Aberdeen, has published in its Report for 1905 a paper by the Director of Research, THOMAS JAMIESON,[17] Chev. Fr., F. I. C., which is supposed to overthrow the current knowledge as to the fixation of nitrogen by the root tubercle organisms and to prove that plants of many sorts utilize the nitrogen of the air directly by means of the hairs with which the leaves are furnished. The laudations with which this pretended "research" was received at the annual meeting by men even more ignorant of the subject than the "director of research," are really worthy of a place in comic literature, were it not for its serious side in giving local currency at least to foolish notions.

The "research" itself is its own condemnation, and shows the "director" to be as ignorant of chemistry as of the physiology and anatomy of plants. Here is a serious society in Scotland, spending money for that which is not bread, lauding an imposture as a wonderful discovery, publishing a report with twelve colored plates illustrating the "albumen generators" imagined by a man who does not know the difference between surface hairs and the spiral tracheae of "Holly laurifolia"! Further it summarizes the previous "leading results" of this same "director;" among which we note the discovery that there is "an aperture in root hairs by which the absorption of insoluble matter is explained;" and that the "feathery structures in the flowers of cereals and grasses are not essential parts of the pistil but serve to drive out the anthers to the air"!

Yet we can hardly bring a railing accusation against the misled members of this society when our own postoffice department has had recently to deny the use of the mails, to prevent our own people from being swindled, to a rascal who is advertising "vineless potatoes," that produce a large crop of tubers when planted in wet sawdust and watered with "potatine" at $4.50 per! Truly, some botanical training might save the farmer from his foolish as well as his knavish friends.—C. R. B.

Corky cell-layers in monocotyledons.—MÜLLER describes[18] in detail the cutinized membranes in the root and stem of *Convallaria majalis*, viz., epiblem covering the root-cap, intercutis of greater or less thickness in the cortex of root and rhizome, endodermis, and epidermis. The microchemical reactions for each of these layers are given. A process called "metacutinization" is described, which involves all the outer cells of a root-tip, and occurs at the end of the growing season. Four stages in the development of the endodermis are distinguished, following KROEMER, viz., embryonic, primary (characterized by presence of CASPARY'S points), secondary, and tertiary (showing suberization and lignification of a large part of the wall). The endodermis of the root does not usually pass through more than the first two stages. The writer brings together the information available concerning the presence or absence of an endodermis in monocotyledonous stems, and a survey of the tables shows that in about 60 per cent of the species an endodermis is present in the underground stem, while only in Medeola and Scindapsis has an endodermis been reported for the aerial stem. The relation of the starch sheath of aerial stems to the endodermis of rhizomes was also studied, and the writer failed to establish an actual continuity between the two layers. The function of the endodermis is said to be the transfer of water and food between the central cylinder and the cortex, and the increasing cutinization is associated with the necessity for checking the movement of solutes in the radial direction.—M. A. CHRYSLER.

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[17] JAMIESON, THOMAS, Report for 1905 to Agricultural Research Association. 8vo. pp. 81. 1905.

[18] MÜLLER, HEINRICH, Ueber die Metacutisierung der Wurzelspitze und über die verkorkten Scheiden in den Aehren der Monocotyledonen. Bot. Zeit. **64**:53–84. *pl. 3.* 1906.

Items of taxonomic interest.—H. D. HOUSE (Muhlenbergia **1**:127–131. 1906) publishes several changes in the nomenclature of Orchidaceae, and describes a new Californian species of Dichondra.—A. A. HELLER (*idem* 134) publishes a new Californian species of Ribes.—Under the editorship of IGN. URBAN (Engler's Bot. Jahrb. **37**:373–462. *pl. 9.* 1906) a fascicle of 18 contributions describing new Andean plants has been published, among which the following new genera appear: *Orchidotypus* (Orchidaceae), by F. KRÄNZLIN; *Laccopetalum* (Ranunculaceae), by E. ULBRICH; *Belonanthus* and *Stangea* (Valerianaceae), by P. GRAEBNER, who gives a general synopsis of the family.—R. PILGER (idem, Beiblatt 85, pp. 58–67) describes a new genus (*Lamprothyrsus*) of South American grasses near Danthonia.—S. LEM. MOORE (Jour. Botany **44**:145–154. 1906) has described 2 new genera from Madagascar: *Cloiselia* (Compositae) and *Stenandriopsis* (Acanthaceae).—R. M. HARPER (Bull. Torr. Bot. Club **33**:229–245. 1906) has described new species from the coastal plain of Georgia under Sporobolus and Nymphaea.—W. H. BLANCHARD (Rhodora **8**:95–98. 1906) has described two new species of Rubus from New England, both of them high blackberries.—A. ZAHLBRUCKNER (Ber. Deutsch. Bot. Gesell. **24**:141–146. *pl. 10.* 1906) has described a new genus (*Lindauopsis*) of parasites in the hymenium of lichens.—R. SCHLECHTER (Bot. Jahrb. **39**:161–274. *figs.* 13–23. 1906), in completing his account of New Caledonian plants, describes the following new genera: *Menepetalum* (Celastraceae), *Acropogon* (Sterculiaceae), *Memecylantus* and *Pachydiscus* (Caprifoliaceae).—J. M. C.

Double fertilization in Carpinus.—In 1893 Miss BENSON published her first paper on the embryology of the Amentiferae. This is now followed by a second